



Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress

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Summary

The Navy's proposed FY2010 budget requests funding for eight new Navy ships. This total includes two relatively expensive, high-capability combatant ships (a Virginia-class attack submarine and a DDG-51 class Aegis destroyer) and six relatively inexpensive ships (three Littoral Combat Ships [LCSs], two TAKE-1 auxiliary dry cargo ships, and one Joint High Speed Vessel [JHSV]). The Navy's proposed FY2010 budget also requests procurement funding for certain Navy ships that were procured but not fully funded in prior years, and advance procurement funding for certain other Navy ships to be procured in future years.

The Administration submitted its proposed FY2010 budget as a single-year budget only, without an accompanying Future Years Defense Plan (FYDP) for the period FY2010-FY2015. The Administration also did not submit a 30-year shipbuilding plan for the period FY2010-FY2039, as required by 10 USC 231. Consequently, relatively little budget-submission information is available concerning the Administration's plans for Navy ship procurement in fiscal years after FY2010.

Concerns about the Navy's prospective ability to afford its long-range shipbuilding plan, combined with year-to-year changes in Navy shipbuilding plans and significant cost growth and other problems in building certain new Navy ships, have led to strong concerns among some Members about the status of Navy shipbuilding and the potential future size and capabilities of the fleet.

H.Res. 477, introduced on May 21, 2009, directs the Secretary of Defense to transmit to the House of Representatives the FY2010 30-year shipbuilding plan, as required by section 10 USC 231.

This report will be updated as events warrant.

Contents

Introduction and Issue for Congress	1
Background	1
Proposed 313-Ship Fleet	1
FY2010 Shipbuilding Request.....	3
FY2010-FY2015 Shipbuilding Plan Not Submitted	4
FY2010 30-Year Shipbuilding Plan Not Submitted.....	6
Oversight Issues for Congress	8
FY2010 30-Year Shipbuilding Plan Not Submitted.....	8
Adequacy of Proposed 313-Ship Fleet.....	10
Adequacy of Shipbuilding Plan for Maintaining 313 Ships.....	10
This Section Based on FY2009 30-Year Shipbuilding Plan.....	10
Summary	10
Shortfalls Relative to 313-Ship Goals	12
Affordability of Shipbuilding Plan	16
This Section Based on FY2009 30-Year Shipbuilding Plan.....	16
Overview	16
June 2008 CBO Report	17
Legislative Activity for FY2010	18
H.Res. 477 (directing submission of FY2010 30-year shipbuilding plan)	18
Legislation on Individual Shipbuilding Programs	20

Tables

Table 1. Recent Navy Ship Force Structure Proposals	2
Table 2. New-Construction Navy Ships Proposed for Procurement in FY2010.....	3
Table 3. Navy FY2009-FY2013 Shipbuilding Plan	5
Table 4. Navy FY2009 30-Year Shipbuilding Plan.....	7
Table 5. Navy Projection of Future Force Levels Under FY2009 30-Year Plan	11
Table 6. Projected Shortfall Relative to 313-Ship Force Under FY2009 30-Year Plan	12
Table 7. Projected Amount of Amphibious Lift Under FY2009 30-Year Plan	14
Table 8. Average Annual Shipbuilding Costs Under FY2009 30-Year Plan.....	18
Table E-1. Total Number of Ships in the Navy Since FY1948	31
Table E-2. Battle Force Ships Procured or Requested, FY1982-FY2010	32

Appendixes

Appendix A. Potential For Changing 313-Ship Proposal.....	21
Appendix B. Modified Description of Required Number of Aircraft Carriers	24
Appendix C. Adequacy of Planned 313-Ship Fleet	25

Appendix D. Affordability of Navy 30-Year Plan in 2006-2007	28
Appendix E. Size of the Navy and Navy Shipbuilding Rate.....	30

Contacts

Author Contact Information	32
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Introduction and Issue for Congress

The Navy's proposed FY2010 budget requests funding for eight new Navy ships. This total includes two relatively expensive, high-capability combatant ships (a Virginia-class attack submarine and a DDG-51 class Aegis destroyer) and six relatively inexpensive ships (three Littoral Combat Ships [LCSs], two TAKE-1 auxiliary dry cargo ships, and one Joint High Speed Vessel [JHSV]). The Navy's proposed FY2010 budget also requests procurement funding for certain Navy ships that were procured but not fully funded in prior years, and advance procurement funding for certain other Navy ships to be procured in future years.

The Administration submitted its proposed FY2010 budget as a single-year budget only, without an accompanying Future Years Defense Plan (FYDP) for the period FY2010-FY2015. The Administration also did not submit a 30-year shipbuilding plan for the period FY2010-FY2039, as required by 10 USC 231. Consequently, relatively little budget-submission information is available concerning the Administration's plans for Navy ship procurement in fiscal years after FY2010.

Concerns about the Navy's prospective ability to afford its long-range shipbuilding plan, combined with year-to-year changes in Navy shipbuilding plans and significant cost growth and other problems in building certain new Navy ships, have led to strong concerns among some Members about the status of Navy shipbuilding and the potential future size and capabilities of the fleet.

The issue for Congress that is discussed in this report is how to respond to the Navy's proposed force structure and shipbuilding plans. Decisions that Congress makes on this issue could significantly affect future U.S. military capabilities, Navy funding requirements, and the Navy shipbuilding industrial base.

Background

Proposed 313-Ship Fleet

Table 1 shows the composition of the Navy's planned 313-ship fleet, which the Navy first presented to Congress in February 2006, and compares the 313-ship plan to other recent Navy ship force structure proposals. In September 2008, it was reported that the Navy is conducting a force-structure review that could lead to a change in the planned size and composition of the fleet;¹ for further discussion, see **Appendix A**. The planned size and structure of the Navy could also be discussed as part of the Quadrennial Defense Review (QDR), which is currently in progress.

¹ Zachary M. Peterson, "Navy Undergoing A New Force Structure Review Due This Fall," *Inside the Navy*, September 29, 2008.

Table I. Recent Navy Ship Force Structure Proposals

Ship type	2006 Navy proposal for 313- ship fleet	Early-2005 Navy proposal for fleet of 260-325 ships		2002-2004 Navy proposal for 375- ship Navy ^a	2001 QDR plan for 310- ship Navy
		260-ships	325-ships		
Ballistic missile submarines (SSBNs)	14	14	14	14	14
Cruise missile submarines (SSGNs)	4	4	4	4	2 or 4 ^b
Attack submarines (SSNs)	48	37	41	55	55
Aircraft carriers	11/12 ^c	10	11	12	12
Cruisers, destroyers, frigates	88	67	92	104	116
Littoral Combat Ships (LCSs)	55	63	82	56	0
Amphibious ships	31	17	24	37	36
MPF(F) ships ^d	12 ^d	14 ^d	20 ^d	0 ^d	0 ^d
Combat logistics (resupply) ships	30	24	26	42	34
Dedicated mine warfare ships	0	0	0	26 ^e	16
Other ^f	20	10	11	25	25
Total battle force ships	313/314	260	325	375	310 or 312

Sources: U.S. Navy data.

- a. Initial composition. Composition was subsequently modified.
- b. The report on the 2001 QDR did not mention a specific figure for SSGNs. The Administration's proposed FY2001 Department of Defense (DOD) budget requested funding to support the conversion of two available Trident SSBNs into SSGNs, and the retirement of two other Trident SSBNs. Congress, in marking up this request, supported a plan to convert all four available SSBNs into SSGNs.
- c. 11 carriers, and eventually 12 carriers.
- d. Today's 16 Maritime Prepositioning Force (MPF) ships are intended primarily to support Marine Corps operations ashore, rather than Navy combat operations, and thus are not counted as Navy battle force ships. The Navy's planned MPF (Future) ships, however, may be capable of contributing to Navy combat capabilities (for example, by supporting Navy aircraft operations). For this reason, MPF(F) ships are counted here as battle force ships.
- e. The figure of 26 dedicated mine warfare ships includes 10 ships maintained in a reduced mobilization status called Mobilization Category B. Ships in this status are not readily deployable and thus do not count as battle force ships. The 375-ship proposal thus implied transferring these 10 ships to a higher readiness status.
- f. Includes, among other things, command ships and support ships.

FY2010 Shipbuilding Request

The Navy's proposed FY2010 budget requests funding for eight new-construction Navy ships. It also requests procurement funding for certain Navy ships that were procured but not fully funded in prior years, and advance procurement funding for certain other Navy ships to be procured in future years. **Table 2** compares the new-construction ships projected for FY2010 in the FY2009 budget to the new-construction ships actually requested in the FY2010 budget.

Table 2. New-Construction Navy Ships Proposed for Procurement in FY2010

Ship type	FY2010 column as projected in FY2009 budget	FY2010 column as actually requested in FY2010 budget	Change in FY2010 column from FY2009 budget to FY2010 budget
Ford (CVN-78) class aircraft carrier	0	0	NC
Virginia (SSN-774) class attack submarine	1	1	NC
Zumwalt (DDG-1000) class destroyer	1	0	-1
Arleigh Burke (DDG-51) class destroyer	0	1	+1
Littoral Combat Ship (LCS)	3	3	NC
San Antonio (LPD-17) class amphibious ship	0	0	NC
MPF-A (large-deck aviation ship for Maritime Prepositioning Force (Future) , or MPF[F], squadron)	1	0	-1
Lewis and Clark (TAKE-1) class dry cargo ship for MPF(F) squadron	0	2	+2
Mobile Landing Platform (MLP) ship for MPF(F) squadron	1	0	-1
Joint High Speed Vessel (JHSV)	1	1	NC
TOTAL	8	8	NC

Source: Prepared by CRS based on U.S. Navy data.

Observations that can be made about the FY2010 shipbuilding request include the following:

- The eight new ships requested for FY2010 include two relatively expensive, high-capability combatant ships (a Virginia-class attack submarine and a DDG-51 class Aegis destroyer) and six relatively inexpensive ships (three Littoral Combat Ships [LCSs], two TAKE-1 auxiliary dry cargo ships, and one Joint High Speed Vessel [JHSV]).
- Although **Table 2** shows no change in the CVN-78 line, the Secretary of Defense announced on April 6, 2009, that aircraft carriers in coming years would be procured at five-year intervals (as opposed to the previous combination of four- and five-year intervals). This proposal, if implemented, would defer procurement of the aircraft carrier known as CVN-79 by one year, from FY2012 to FY2013. The FY2010 budget request includes procurement funding to help complete the

procurement cost of CVN-78, which was procured in FY2008, and advance procurement funding for CVN-79.²

- Under a multi-year procurement (MYP) arrangement approved for the Virginia-class program, a total of eight Virginia-class boats are to be procured in FY2009-FY2013, in annual quantities of 1, 1, 2, 2, and 2. The Virginia-class boat to be procured in FY2010 is the second of the eight boats covered under this MYP arrangement. Consistent with this MYP arrangement, the FY2010 budget requests advance procurement funding to support the procurement of two Virginia-class boats in FY2011.³
- The deletion of the DDG-1000 destroyer and the addition of the DDG-51 destroyer reflects the Administration's proposal to end DDG-1000 procurement with the third DDG-1000 (which was authorized in FY2009), and restart procurement of DDG-51s in FY2010.⁴ In addition to requesting funding for the procurement of a DDG-51, the proposed FY2010 budget requests funding to complete the procurement cost of the third DDG-1000, which was authorized but not fully funded in FY2009.
- The Secretary of Defense announced on April 6, 2009, that procurement of an 11th LPD-17 and an MLP would be deferred one year, from FY2010 to FY2011. The proposed FY2010 budget requests funding to complete the cost of the 10th LPD-17, which was authorized but not fully funded in FY2009, and advance procurement funding for the 11th LPD-17.
- The two TAKEs requested for FY2010 are the 13th and 14th ships in the TAKE program, and are to be the final two ships in the program. The Navy in 2008 stated that it removed these two ships from the FY2009-FY2013 shipbuilding plan pending the completion of a review of requirements for the MPF(F) squadron, and that it was anticipated that these two ships would be re-inserted into the shipbuilding plan following the completion of that review.
- The JHSV shown in **Table 2** is for the Navy. The proposed FY2010 budget also requests funding for the procurement in FY2010 of a second JHSV for the Army. This second JHSV is not shown in the table.

FY2010-FY2015 Shipbuilding Plan Not Submitted

The Administration submitted its proposed FY2010 budget as a single-year budget only, without an accompanying Future Years Defense Plan (FYDP) for the period FY2010-FY2015. For reference purposes, **Table 3** shows the Navy's FY2009-FY2013 ship-procurement plan, which was submitted to Congress in February 2008 as part of the FY2009 budget submission.

² For further discussion, see CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke

³ For further discussion, see CRS Report RL32418, *Navy Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke

⁴ For further discussion, see CRS Report RL32109, *Navy DDG-1000 and DDG-51 Destroyer Programs: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke

Table 3. Navy FY2009-FY2013 Shipbuilding Plan
(Ships funded in FY2007 and FY2008 shown for reference)

	FY07	FY08	FY09	FY10	FY11	FY12	FY13	Total FY09- FY13
CVN-21		/				/		/
SSN-774	/	/	/	/	2	2	2	8
DDG-1000	2 ^a	0 ^a	/	/	/	/	/	5
CG(X)					/		/	2
LCS	0 ^b	/	2	3	3	4	6	18
LPD-17		/						0
LHA(R)	/							0
TAKE	/	0 ^c	2 ^c					2
JCC(X)						/		/
TATF								0
JHSV^d			/	/	/	/	/	5
MPF(F) TAKE								0
MPF(F) LHA(R)				/				/
MPF(F) LMSR						/		/
MPF(F) MLP				/		/	/	3
Total	5	4 ^c	7	8	8	12	12	47
Subtotal: ships other than LCSs	5	3	5	5	5	8	6	29

Source: Navy FY2009 budget submission.

Key: **CVN-21** = Ford (CVN-21) class nuclear-powered aircraft carrier. **SSN-774** = Virginia (SSN-774) class nuclear-powered attack submarine. **CG(X)** = CG(X) class cruiser. **DDG-1000** = Zumwalt (DDG-1000) class destroyer. **CG(X)** = CG(X) class cruiser. **LCS** = Littoral Combat Ship. **LPD-17** = San Antonio (LPD-17) class amphibious ship. **LHA(R)** = LHA(R) class amphibious assault ship. **TAKE** = Lewis and Clark (TAKE-I) class resupply ship. **TAKE-MPF(F)** = Modified TAKE intended for MPF(F) squadron. **MPF(F) LHR(A)** (also called **MPF(F) Aviation**) = Modified LHA(R) intended for MPF(F) squadron. **LMSR-MPF(F)** = Modified large, medium-speed, roll-on/roll-off (LMSR) sealift ship intended for MPF(F) squadron. **MLP-MPF(F)** = Mobile Landing Platform ship intended for MPF(F) squadron. **TATF** = oceangoing fleet tug. **JCC(X)** = Joint command and control ship. **JHSV** = Joint High-Speed Vessel transport ship.

- Two DDG-1000s were procured in FY2007 using split-funding in FY2007 and FY2008.
- Although two LCSs were originally funded in FY2007, the Navy canceled these ships as part of its 2007 restructuring of the LCS program.
- Although Congress funded the procurement of one TAKE for Navy use in FY2008, the Navy is using much of this funding to complete the cost of the TAKE funded in FY2007. (The Navy is using much of the funding that Congress had provided for the FY2007 TAKE in turn to pay for cost growth on TAKES procured in earlier years.) The Navy consequently now records zero TAKES as procured in FY2008 (rather than one), and the total number of ships of all kinds procured in FY2008 as four (rather than five). One of the two TAKES requested for FY2009 is the same TAKE that Congress originally funded in FY2008.
- Ships shown are those being procured for Navy use. Additional JHSVs are being procured separately for Army use and are not shown in the Navy's shipbuilding plan.

FY2010 30-Year Shipbuilding Plan Not Submitted

The Administration did not submit a 30-year shipbuilding plan for the period FY2010-FY2039, as required by 10 USC 231. A May 12, 2009, letter from the acting Secretary of the Navy to the chairmen of the House and Senate Armed Services Committees and the Defense subcommittees of the House and Senate Appropriations Committees stated:

Under Title 10 USC [section] 231, the Secretary of Defense is required to submit with the Defense Budget an Annual Long Range [i.e., 30-year] Plan for the Construction of Naval Vessels and certification that both the budget for that fiscal year and the Future Years Defense Program provide the funding required to support the Navy's long-range construction plan. Given [that] the National Security Strategy is due for release this summer, future force structure may be impacted. Therefore, the Navy considers it prudent to defer its Fiscal Year 2010 report and submit its next report concurrent with the President's Fiscal Year 2011 budget.

In addition to the National Security Strategy, the statutory guidelines require the report to reflect the Quadrennial Defense Review (QDR). The latest QDR is on-going in parallel with the National Security Strategy work. Additionally, the Nuclear Posture Review, which has direct bearing on the numbers of strategic ballistic missile submarines, is due for completion incident with submission of the Fiscal Year 2011 budget. These efforts will likely have a substantive impact on the Navy's force structure requirements.

It is important to ensure the Navy's long-range shipbuilding plan reflects the most up-to-date force structure requirements. I believe the plan would better support a stable demand for the shipbuilding industry by minimizing its iterations and ensuring alignment with guidance. The Fiscal Year 2011 report will integrate all of the guidance and provide a more useful and comprehensive shipbuilding plan.⁵

A February 2009 press report suggested that the Navy in late-2008 was examining options for reducing the cost of the FY2010 version of its 30-year shipbuilding plan by reducing planned procurements of certain higher-cost ships. According to the report, proposals being considered by the Navy include the following:

- shifting planned procurement of CVNs from one approximately every 4.5 years to one every five years—a change that was endorsed by Secretary of Defense Robert Gates as part of a series of proposals on the FY2010 defense budget that he announced on April 6, 2009;
- reducing planned procurement of attack submarines (SSNs) over 30 years from 53 boats to 40 boats, a reduction of about 25%;
- reducing planned procurement of CG(X) cruisers from 19 (procured at a rate of one or two per year) to 8 (procured at a rate of one every three years), a reduction of about 58%;
- reducing planned procurement of destroyers over 30 years from 50 ships to 34, a reduction of 32%; and

⁵ Letter dated May 12, 2009, from B. J. Penn, Acting Secretary of the Navy, to the chairmen of the House and Senate Armed Services Committee and the Defense subcommittees of the House and Senate Appropriations Committees. Letter provided to CRS by Navy Office of Legislative Affairs on May 20, 2009.

- eliminating the three modified large-deck amphibious assault ships (LHAs/LHDs) from the planned Maritime Prepositioning Force of the Future (MPF(F)) squadron.

This press report also suggested that the Navy was considering more than doubling planned procurement of relatively inexpensive Joint High Speed Vessels (JHSVs), from 14 over 30 years to 29, and increasing annual procurement rates of the relatively inexpensive Littoral Combat Ship (LCS) while maintaining a planned total of 55 LCSs.⁶

For reference purposes, **Table 4** shows the Navy's 30-year ship-procurement plan for the period FY2009-FY2038, which was submitted in February 2008, as part of the FY2009 budget submission.

Table 4. Navy FY2009 30-Year Shipbuilding Plan
(including FY2009-FY2013 FYDP)

F Y	Ship type (see key below)										
	C V N	S C	L C S	S S N	S S G N	S S B N	A W S	C L F	M P F (F)	S u p t	T O T A L
09		1	2	1				1	1	1	7
10		1	3	1					2	1	8
11		2	3	2						1	8
12	1	1	4	2					2	2	12
13		2	6	2					1	1	12
14		1	6	2					2	2	13
15		2	6	2					1	2	13
16	1	2	6	2			1				12
17		2	6	2			1			1	12
18		2	6	2			1	1		1	13
19		2	4	2		1				1	10
20		2		2			2	2		2	10
21	1	2		2				2			7
22		2		2		1	1	2		2	10
23		1		2			1	2		3	9
24		2		2		1	1	2		2	10
25	1	3		2		1		2		2	11
26		3		2		1	2	2			10
27		3		2		1					6

⁶ Christopher P. Cavas, "U.S. May Cut 52 Ships From Plan," *Defense News*, February 16, 2009, p. 1.

F Y	Ship type (see key below)										
	C V N	S C	L C S	S S N	S S G N	S S B N	A W S	C L F	M P F (F)	S u p t	T O T A L
28		3		2		1	1				7
29	1	3		1		1	1	1		1	9
30		3		2		1	1			1	8
31		3		1		1		1		1	7
32		3	1	2		1	2	1		1	11
33		3		1		1		1		1	7
34	1	3	2	2			1			1	10
35		3	5	1			1			1	11
36		3	5	2			1				11
37		3	5	1							9
38	1	3	5	2			2				13

Source: Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009.

Key: **FY** = Fiscal Year; **CVN** = aircraft carriers; **SC** = surface combatants (i.e., cruisers and destroyers); **LCS** = Littoral Combat Ships; **SSN** = attack submarines; **SSGN** = cruise missile submarines; **SSBN** = ballistic missile submarines; **AWs** = amphibious warfare ships; **CLF** = combat logistics force (i.e., resupply) ships; **MPF(F)** = Maritime Prepositioning Force (Future) ships; **Supt** = support ships.

Oversight Issues for Congress

FY2010 30-Year Shipbuilding Plan Not Submitted

One potential oversight issue for Congress concerns the Administration's decision to not submit an FY2010 version of a 30-year shipbuilding plan, as required by 10 USC 231. Potential questions to consider include the following: Are the reasons for not submitting an FY2010 version of the 30-year shipbuilding that are cited in the May 12, 2009, letter from the acting Secretary of the Navy (see "Background" section) adequate? Will this set a precedent for future administrations to not submit a 30-year plan during their first year in office? What implications does the absence of a 30-year plan have for Congress's ability to review, assess, and conduct oversight on the Navy's proposed FY2010 shipbuilding budget?

At a May 15, 2009, hearing on Navy shipbuilding programs before the Seapower and Expeditionary Forces subcommittee of the House Armed Services Committee, Representative Gene Taylor, the chairman of the subcommittee, stated the following in his opening statement for the hearing:

In previous years, at this very hearing [i.e., the subcommittee's annual hearing on Navy shipbuilding programs], I have commented that the budget request and the accompanying 30 year shipbuilding plans were unachievable. In fact, I have stated that the long range plan was 'pure fantasy.' It now appears the Navy has learned how to deflect criticism of the

shipbuilding plan: don't submit one. Although required by title 10 of the United States Code, all plans for future year's ship procurement are being withheld from the Congress. This obviously makes it very difficult for the Members of this Congress to fulfill their Article I responsibilities to 'provide and maintain a Navy.'

I realize the two witnesses sitting before this committee today did not make that decision, and I will not continue to dwell upon it here. But I state for the public record that the failure of the Department to describe the future shipbuilding plan will not prevent this subcommittee from the due diligence required in recommending to the full committee and the full House a shipbuilding plan which will restore the Navy to an acceptable number of ships and which will preserve the domestic industrial capability for construction of warships.⁷

Representative Todd Akin, the ranking member of the subcommittee, stated the following in his opening statement for the hearing:

Our colleague, Representative [Randy] Forbes, asked Secretary Gates and Admiral Mullen about the lack of a 30-year shipbuilding plan at a hearing earlier this week.⁸ Admiral Mullen stated, "...it will come in the [FY]11 budget. And I would say we can rely reasonably well on the 30-year shipbuilding plan that's been submitted before." But I count at least nine ways this budget diverges from the FY09 [30-year] plan:

- Moving the funding of carriers to five year centers, [which] drops the force to 10 carriers in 2039.
- Building [a total of] 3 DDG 1000 destroyers [over several years] instead of 7.
- Building 1 DDG 51 destroyer [in FY2010] instead of zero.
- Not building the next generation cruiser (CG(X)) in FY11.
- Not building a large deck amphib[ious ship] for the Maritime Prepositioning Force in FY10.
- Not building a Mobile Landing Platform ship for the Maritime Prepositioning Force in FY10.
- Not shutting down the LPD-17 production line at 9 ships, but funding the final increment for the 10th ship.
- Building 2 T-AKE ships in FY10 instead of zero.
- Investing half a billion dollars in R&D for the replacement of the OHIO Class submarine.

"So, in fact, we cannot rely upon the last shipbuilding plan and evidently we won't receive a new one."⁹

⁷ Source: Text of Representative Taylor's opening statement.

⁸ This is a reference to a May 13, 2009, hearing before the full House Armed Services Committee on the proposed FY2010 budget for the Department of Defense, for which the witnesses were Robert Gates, the Secretary of Defense, and Admiral Michael Mullen, the Chairman of the Joint Chiefs of Staff.

⁹ Source: Text of Representative Akin's opening statement.

Adequacy of Proposed 313-Ship Fleet

Some observers have questioned whether the Navy's planned 313-ship fleet includes sufficient numbers of certain ships. Areas of concern include planned numbers of amphibious ships and attack submarines. For additional discussion of the issue, see **Appendix C**.

Adequacy of Shipbuilding Plan for Maintaining 313 Ships

This Section Based on FY2009 30-Year Shipbuilding Plan

Since the Administration did not submit an FY2010 30-year shipbuilding plan, this section of the report presents, for reference purposes, a discussion of the FY2009 30-year shipbuilding plan.

Summary

Table 5 shows the Navy's projection of future force levels that would result from fully implementing the Navy's FY2009 30-year shipbuilding plan.

As shown in the table, the FY2009 30-year shipbuilding plan, if implemented, would generally be adequate to achieve and maintain a fleet of about 313 ships. Under the FY2009 30-year plan, the Navy was to reach a total of at least 313 ships in FY2019—three years later than under the FY2008 30-year shipbuilding plan. A primary cause of the three-year delay was the FY2009 plan's 13-ship reduction in the total number of ships planned for procurement in FY2009-FY2013. Most of the 13-ship reduction was due to an 11-ship reduction in the number of Littoral Combat Ships (LCSs) planned for FY2009-FY2013, which is a consequence of the Navy's restructuring of the LCS program in 2007.¹⁰

Although the FY2009 30-year shipbuilding plan would generally be adequate to achieve and maintain a fleet of about 313 ships, it did not include enough ships to fully support certain elements of the 313-ship fleet consistently over the long run—shortfalls would occur in areas such as amphibious lift capability and the number of attack submarines. The Navy's report on the 30-year plan stated: "While in the main this plan achieves the necessary raw numbers of ships and sustains the shipbuilding industrial base, there are certain time periods where the ship mix, and therefore inherent capability of the force, varies from that required as a result of funding constraints and the timing of legacy fleet service life limits."¹¹

The FY2009 30-year plan included new assumptions about extended service lives for amphibious ships and destroyers. If these longer service lives are not achieved, it could increase the shortfall in amphibious lift capability and create a shortfall in the number of cruisers and destroyers.

¹⁰ For more on the LCS program, see CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke.

¹¹ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 5.

Table 5. Navy Projection of Future Force Levels Under FY2009 30-Year Plan
(resulting from implementation of 30-year shipbuilding plan shown in **Table 4**)

F Y	Ship type (see key below)											
	C V N	S C	L C S	S S N	S S G N	S S B N	A W S	C L F	M I W	M P F (F)	S u p t	T O T A L
09	11	109	2	53	4	14	31	31	14	0	17	286
10	11	111	2	52	4	14	32	30	14	0	17	287
11	11	113	2	52	4	14	34	28	14	0	17	289
12	11	110	3	53	4	14	34	29	14	0	18	290
13	10	107	8	54	4	14	33	29	14	1	19	293
14	10	99	11	51	4	14	33	30	14	1	20	287
15	11	94	14	51	4	14	33	30	14	2	21	288
16	11	92	18	49	4	14	33	30	14	4	22	291
17	11	92	24	50	4	14	33	30	13	6	24	301
18	11	93	30	49	4	14	32	30	13	7	26	309
19	12	93	36	50	4	14	32	30	11	9	24	315
20	12	94	42	48	4	14	32	30	10	9	24	319
21	12	95	48	48	4	14	32	30	7	9	24	323
22	12	94	54	47	4	14	32	30	6	10	24	327
23	12	94	55	47	4	14	32	30	2	10	24	324
24	12	94	55	46	4	14	32	30	1	10	24	322
25	12	93	55	45	4	14	33	30	0	10	24	320
26	12	91	55	44	2	14	33	30	0	10	24	315
27	12	91	55	43	1	13	33	30	0	10	24	312
28	12	89	55	41	0	13	33	30	0	10	24	307
29	12	91	55	41	0	13	33	30	0	10	24	309
30	12	94	55	42	0	12	33	30	0	10	24	312
31	12	96	55	44	0	12	33	30	0	10	24	316
32	12	99	55	45	0	12	33	30	0	10	24	320
33	12	101	55	47	0	12	33	30	0	10	24	324
34	12	100	55	49	0	12	33	30	0	10	24	325
35	12	98	55	50	0	12	33	30	0	10	24	324
36	12	95	55	52	0	12	33	30	0	10	24	323
37	12	94	55	53	0	12	33	30	0	10	24	323
38	12	94	55	53	0	12	32	30	0	10	24	322

Source: Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009.

Key: **FY** = Fiscal Year; **CVN** = aircraft carriers; **SC** = surface combatants (i.e., cruisers and destroyers); **LCS** = Littoral Combat Ships; **SSN** = attack submarines; **SSGN** = cruise missile submarines; **SSBN** = ballistic missile submarines; **AWS** = amphibious warfare ships; **CLF** = combat logistics force (i.e., resupply) ships; **MIW** = mine warfare ships; **MPF(F)** = Maritime Prepositioning Force (Future) ships; **Supt** = support ships.

As mentioned earlier, a February 2009 press report suggested that the Navy in late-2008 was examining options for reducing the cost of the FY2010 version of its 30-year shipbuilding plan by reducing planned procurements of certain higher-cost ships. If the FY2010 30-year shipbuilding plan includes changes such as those reported in the press report, the result could be a future Navy that increases for a time to more than 313 ships as significant numbers of relatively inexpensive JHSVs and LCSs enter service in the nearer term, but which subsequently falls to something less than 300 ships as deliveries of JHSVs and LCSs end and existing higher-cost ships continue to retire and are replaced on something less than a one-for-one basis.

Shortfalls Relative to 313-Ship Goals

The FY2009 version of the 30-year shipbuilding plan, like the FY2008 and FY2007 versions, does not include enough ships to fully support all elements of the planned 313-ship force structure over the long run. As shown in **Table 6** below, however, the total projected shortfall in the 30-year plan relative to the 313-ship force structure has been reduced from about 39 ships two years ago to 15 ships today. The reduction in the shortfall from about 39 ships two years ago to about 26 ships one year ago was due primarily to a Navy decision to insert additional destroyers into the final years of the FY2008 plan. The reduction in the shortfall from about 26 ships a year ago to 15 ships today is due primarily to a new assumption incorporated into the FY2009 plan to extend the service lives of the Navy's 62 Arleigh Burke (DDG-51) class Aegis destroyers by five years (from 35 years to 40).

Table 6. Projected Shortfall Relative to 313-Ship Force Under FY2009 30-Year Plan

Projected shortfall by ship type, in numbers of ships, under...	FY2007 (FY07-FY36) plan of Feb. 2006	FY2008 (FY08-FY37) plan of Feb. 2007	FY2009 (FY09-FY38) plan of Feb. 2008
Amphibious ships	1	1	0 ^a
Attack submarines (SSNs)	8	8	7
Cruise missile submarines (SSGNs)	4	4	4
Ballistic missile submarines (SSBNs)	0	0	2 ^b
Cruisers and destroyers	~26	~10	0
MPF(F) ships	0	0	2
Total projected shortfall	~39	~26	15

Source: CRS analysis of Navy data.

- Although the FY2009 30-year shipbuilding plan would support a force of 32 or 33 amphibious ships, as opposed to 31 called for in the 313-ship plan, the 32- or 33-ship force would include nine LPD-17 class ships, as opposed to the 10 called for in the 313-ship plan. The Marine Corps states that fully meeting the requirement for an amphibious force capable of lifting the assault echelons of 2.0 Marine Expeditionary Brigades (MEBs) would require a 33-ship amphibious force that includes 11 LPD-17s.
- Although the FY2009 30-year shipbuilding plan includes 12 replacement SSBNs rather than the 14 called for in the 313-ship plan, the Navy has testified that the 12 new SSBNs would be sufficient to perform the missions of today's 14-ship SSBN force because the 12 new ships would be built with life-of-the-ship nuclear

fuel cores and consequently would not require mid-life refuelings. The Navy states that the need for today's SSBNs to be taken out of service for some time to receive mid-life refuelings is what drives the need for a 13th and 14th SSBN.

Amphibious Ships

Although the FY2009 30-year shipbuilding plan would support a force of 32 or 33 amphibious ships, as opposed to a total of 31 called for in the 313-ship plan, this 32- or 33-ship force would include 9 San Antonio (LPD-17) class amphibious ships, as opposed to the 10 called for in the 313-ship plan.¹² The Navy's report on the FY2009 30-year shipbuilding plan states:

While the mix of the 33 [amphibious] ships reflected in this plan differs slightly from the USMC requirement, it represents acceptable risk considering the amphibious ships planned for decommissioning are not scheduled for dismantling or sinking to permit mobilization at a later date if required. The decommissioning ships are being replaced with newer more capable LPD 17 and LHA 6 class ships. The Navy will maintain the 33-ship requirement for amphibious shipping through the FYDP while these new ships are integrated into the battleforce. Consequently, there will be no amphibious ship capability gaps through at least FY 2019.¹³

The Marine Corps states that lifting the assault echelons of 2.0 Marine Expeditionary Brigades (MEBs)—a requirement that reflects Marine Corps responsibilities under U.S. war plans—would require a 33-ship amphibious force that includes 11 LPD-17s.¹⁴ **Table 7** shows the Marine Corps' calculation of the amount of amphibious lift, relative to the 2.0 MEB lift goal, resulting from the 32- or 33-ship amphibious force that is projected in the Navy's FY2009 30-year shipbuilding plan. The table presents the five different elements of amphibious lift. In the table, a figure of 1.0 in a cell would meet 100% of the 2.0 MEB lift goal for that lift element, a figure of 1.5 would exceed by 50% the 2.0 MEB lift goal for that element, and a figure of 0.75 would meet 75% of the 2.0 MEB lift goal for that element.

As can be seen in the table, the Marine Corps calculates that the projected 32- or 33-ship amphibious force would

- roughly meet the lift goal for VTOL aircraft spaces;
- exceed the lift goal for troops, space for cargo, and spaces for LCAC landing craft; and
- fall short of meeting the lift goal for space for vehicles.

¹² Congress, as part of its action on the FY2008 defense budget, provided \$50 million in advance procurement funding for a 10th LPD-17 to be procured in a fiscal year after FY2008. The FY2009 shipbuilding plan, like the FY2008 shipbuilding plan, does not include a 10th LPD-17, and calls for ending LPD-17 procurement with the ninth ship, which was procured in FY2008. A 10th LPD-17, at a cost of \$1,700 million, is the number-two item on the Navy's FY2009 Unfunded Requirements List (URL) and the first item presented in the Marine Corps' FY2009 URL.

¹³ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. A-3.

¹⁴ The 33-ship force that would fully meet the 2.0 MEB lift requirement includes 11 large-deck amphibious assault ships (LHAs/LHDs), 11 LPD-17s, and 11 LSD-41/49 class amphibious ships.

Table 7. Projected Amount of Amphibious Lift Under FY2009 30-Year Plan
(Relative to 2.0 MEB lift requirement, Resulting From Amphibious Force Supported By FY2009 Navy 30-Year Shipbuilding Plan)

	2008	2009	2010	2015	2020	2025	2030	2035
Troops	1.46	1.35	1.38	1.45	1.42	1.35	1.49	1.59
Vehicle (sq. ft.)	0.77	0.75	0.80	0.90	0.88	0.93	1.05	1.17
Cargo (cu. ft.)	2.02	1.90	1.92	2.07	2.04	1.95	2.28	2.49
VTOL aircraft	1.02	0.93	0.94	1.07	1.06	0.97	1.18	1.31
LCACs	1.81	1.75	1.79	1.79	1.75	1.77	1.65	1.50

Source: U.S. Marine Corps data provided to CRS, March 11, 2008. Calculations are based on 15 operational ships per MEB. A figure of 1.0 in a cell would meet 100% of the 2.0 MEB lift goal for that lift element; a figure of 1.5 would exceed by 50% the goal for that element; and a figure of 0.75 would meet 75% of the goal for that element.

If the Navy cannot extend the service lives of amphibious ships as much as assumed in the FY2009 30-year shipbuilding plan, then the amount of amphibious lift capability in future years could be less than that shown in **Table 7**.

Attack Submarines (SSNs)

Although the 313-ship plan calls for a total of 48 SSNs, the 30-year shipbuilding plan does not include enough SSNs to maintain a force of 48 boats consistently over the long run. The Navy projects that the SSN force will drop below 48 boats in 2022, reach a minimum of 41 boats (14.6% less than the required figure of 48) in FY2028 and FY2029, and remain below 48 boats through 2033. The Navy has completed a study on various options for mitigating the projected SSN shortfall. One of these options is to procure one or more additional SSNs in the period FY2008-FY2011. The issue is discussed in more detail in another CRS report.¹⁵

Converted Trident Submarines (SSGNs)

Although the 313-ship plan calls for four SSGNs, the FY2009 30-year shipbuilding plan includes no replacements for the four current SSGNs, which the Navy projects will reach retirement age and leave service in FY2026-FY2028. The Navy's report on the 30-year shipbuilding plan states:

Plans for recapitalization [i.e., replacement] of the OHIO class submarines that have been converted to SSGN have been deferred until their warfighting utility can be assessed. Should their replacement be required, it will be necessary to integrate their procurement with other ship and submarine recapitalization efforts planned for the post-FY 2020 period.¹⁶

¹⁵ CRS Report RL32418, *Navy Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

¹⁶ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 8.

Ballistic Missile Submarines (SSBNs)

Although the FY2009 30-year shipbuilding plan includes 12 replacement SSBNs rather than the 14 called for in the 313-ship plan, the Navy has testified that the 12 new SSBNs would be sufficient to perform the missions of today's 14-ship SSBN force because the 12 new ships would be built with life-of-the-ship nuclear fuel cores and consequently would not require mid-life refuelings. The Navy states that the need for today's SSBNs to be taken out of service for some time to receive mid-life refuelings is what drives the need for a 13th and 14th SSBN.

Cruisers and Destroyers

Although the FY2009 30-year plan assumes a 5-year service life extension for the Navy's 62 DDG-51s, a Navy official was quoted after the FY2009 30-year plan was released as stating that the Navy had not yet officially approved the idea of extending the service lives of those ships.¹⁷ One potential oversight issue for Congress is why the 30-year plan assumed a 5-year service life extension for the DDG-51s if the Navy had not yet officially approved the idea. If the Navy approves the idea, a second potential oversight issue for Congress is whether the Navy will actually be able to extend the service lives of the DDG-51s and operate them in a cost-effective manner for 40 years, given the wear and tear that might accrue on the ships in coming years, as well as the DDG-51 design's space, weight, and electrical-power capacities. If a five-year service life extension for the DDG-51s proves infeasible or not cost-effective, a shortfall in cruisers and destroyers similar to that shown in the FY2008 column in **Table 6** might reappear.

MPF(F) Ships

The projected two-ship shortfall in MPF(F) ships is due to a decision to drop two Lewis and Clark (TAKE-1) class dry cargo ships from the shipbuilding plan. These two ships were previously planned for procurement in FY2010 and FY2011. Navy officials have stated the two ships were removed from the plan pending the completion of a study on the MPF(F) concept of operations, and that the two ships might be put back into the shipbuilding plan next year, following the completion of this study.¹⁸

Aircraft Carriers

As mentioned earlier, the Navy projects that the carrier force will drop from the current figure of 11 ships to 10 ships for a 33-month period between the scheduled retirement of the carrier Enterprise (CVN-65) in November 2012 and scheduled the entry into service of its replacement, the carrier Gerald R. Ford (CVN-78), in September 2015. The Navy projects that the force will increase to 12 carriers starting in FY2019, when CVN-79 is commissioned.

10 USC §5062 requires the Navy to maintain an aircraft carrier force of at least 11 operational ships. As it did for FY2008, the Navy for FY2009 requested a legislative waiver from Congress that would permit the Navy to reduce the carrier force to 10 operational ships for the 33-month

¹⁷ Zachary M. Peterson, "Destroyer Extension Part of 313-Ship Plan," *NavyTimes.com*, February 11, 2008.

¹⁸ See, for example, U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 9.

between the retirement of the Enterprise and the entry into service of the Ford. The issue is discussed further in another CRS report.¹⁹

Affordability of Shipbuilding Plan

This Section Based on FY2009 30-Year Shipbuilding Plan

Since the Administration did not submit an FY2010 30-year shipbuilding plan, this section of the report presents, for reference purposes, a discussion of the FY2009 30-year shipbuilding plan.

Overview

One of the most significant features in the FY2009 30-year shipbuilding plan, compared to the FY2008 30-year plan, was an apparent increase of roughly 44% in real (inflation-adjusted) terms in the Navy's estimated average annual cost to implement the 30-year plan. This roughly 44% real increase was not due to significant changes in the composition of the 30-year plan, because the types and quantities of ships to be procured under FY2009 30-year plan were generally the same as those in the FY2008 30-year plan.²⁰

In 2007, the Congressional Budget Office (CBO) estimated that last year's version of the 30-year plan would cost roughly 35% more per year to implement than the Navy was estimating. The Navy in 2007 downplayed CBO's higher cost estimate, referring to it in testimony as "worst-case analysis"²¹ or as an "extremely conservative" estimate.²² The Navy's revised estimated cost for the FY2009 30-year plan, however, is within about 7% of CBO's estimates for the cost of the plan.

In 2006 and 2007, the Navy had a clearly identifiable strategy for achieving the shipbuilding budget that the Navy then estimated would be needed to implement the 30-year shipbuilding plan. CRS and CBO discussed in reports and testimony in 2006 and 2007 how the Navy's strategy for executing the shipbuilding plan depended on a series of five assumptions concerning the future size and composition of the Navy's budget and the costs of future Navy ships. As noted by both CRS and CBO in 2006 and 2007, all five of these assumptions could be viewed as risk items for the plan, because there were grounds for questioning whether each of them would be borne out. (For additional discussion, see **Appendix D**.)

The 2008 increase in the Navy's estimated cost for implementing the 30-year plan was so large that the Navy no longer appears to have a clearly identifiable, announced strategy for generating the funds needed to implement the 30-year plan, at least not without significantly reducing

¹⁹ CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.

²⁰ The FY2009-FY2038 plan includes 296 ships, or about 1.7% more than the 291 ships in the FY2008-FY2037 plan. The types of ships procured under the two plans are essentially the same, and the total numbers of each type being procured are in most cases similar.

²¹ Source: Transcript of spoken testimony of Vice Admiral Paul Sullivan before the Seapower and Expeditionary Forces subcommittee of the House Armed Services Committee on March 20, 2007.

²² Source: Transcript of spoken testimony of Allison Stiller before the Defense subcommittee of the House Appropriations Committee on April 25, 2007.

funding for other Navy programs or increasing the Navy's programmed budget in coming years by billions of dollars per year.

June 2008 CBO Report

A June 2008 CBO report on the Navy's FY2009 30-year shipbuilding plan states that CBO's analysis indicates the following:

—Executing the Navy's most recent 30-year shipbuilding plan would cost an average of about \$27 billion a year (in [FY]2009 dollars), or more than double the \$12.6 billion a year that the Navy has spent, on average, since [FY]2003.... Since CBO testified on this topic on March 14, [2008], the Navy provided additional information that led CBO to increase its estimate of the annual cost of the shipbuilding plan from \$25 billion to \$27 billion.

—After releasing its [report on the FY2009 30-year shipbuilding plan], the Navy discovered a calculation error that caused the costs initially reported in the [FY]2009 plan to be about 10 percent higher than the Navy now expects them to be. After correcting for that error, the Navy's estimate of the costs of implementing its 30-year shipbuilding plan is about 10 percent less than the estimates that CBO has prepared during the past three years.

—The Navy's [FY]2009 budget request appears to depart from all of the budgetary assumptions used to develop the service's [FY]2007 and [FY]2008 shipbuilding plans.

—CBO's estimates of the costs of the Navy's shipbuilding program through the period covered by the [FY]2009-[FY]2013 Future Years Defense Program are about 30 percent higher than the Navy's estimates. In particular, CBO estimates that the DDG-1000 guided-missile destroyer and the CG(X) future cruiser would probably cost significantly more than the Navy currently estimates.

—For the [FY]2009-[FY]2020 period—described as the “near term” in the Navy's plan—CBO estimates that new-ship construction alone would cost about 13 percent more than the Navy indicates.

—For the period beyond [FY]2020—described as the “far term” in the Navy's plan—CBO estimates that costs would be about 8 percent greater than the Navy projects.²³

Table 8, which is taken from CBO's June 2008 report, summarizes Navy and CBO estimates of the cost to implement the 30-year shipbuilding plan.

²³ Source: Cover letter to Congressional Budget Office, *Resource Implications of the Navy's Fiscal Year 2009 Shipbuilding Plan*, Washington, 2008. (June 9, 2008) The cover letter, dated June 9, 2008, is from Peter Orszag, Director, CBO, and is addressed to Representative Gene Taylor, the Chairman of the Seapower and Expeditionary Forces subcommittee of the House Armed Services Committee, with copies to Representative Roscoe Bartlett, the Ranking Member of the subcommittee, and Representatives Ike Skelton and Duncan Hunter, the Chairman and Ranking Member, respectively, of the House Armed Services Committee.

Table 8. Average Annual Shipbuilding Costs Under FY2009 30-Year Plan

(from June 2008 CBO report; figures in billions of constant FY2009 dollars)

	New-ship construction		New-ship construction (including SSBNs), plus:	
	Excluding SSBNs	Including SSBNs	Nuclear refuelings	Nuclear refuelings, LCS mission modules, and surface combat-ant modernization
Actual Navy spending, FY03-FY08	11.1	11.1	12.4	12.6
Average annual cost as estimated by:				
Navy	20.4	23.2 ^a	24.4 ^b	25.2 ^b
CBO	22.4	25.0	26.2	26.9
CBO's estimate of the cost to fully fund the Navy's 313-ship fleet^c				
	22.5	25.5	26.7	27.4
Memorandum: Navy's estimate average annual cost in 2006 and 2007				
	n.a.	16.1	17.2 ^b	18.0 ^b

Source: Table 3 from Congressional Budget Office, Resource Implications of the Navy's Fiscal Year 2009 Shipbuilding Plan, Washington, 2008. (June 9, 2008) p. 14.

- a. The Navy's estimate for new-ship construction plus the Navy's cost target for SSBNs under the FY2007 and FY2008 shipbuilding plans.
- b. The Navy's estimate for new-ship construction and cost target for SSBNs plus CBO's estimates for the additional costs.
- c. CBO's estimates of the costs to buy all of the attack submarines, guided-missile submarines, ballistic missile submarines, logistics ships, and amphibious ships needed to maintain a 313-ship fleet.

Legislative Activity for FY2010

H.Res. 477 (directing submission of FY2010 30-year shipbuilding plan)

H.Res. 477, introduced on May 21, 2009, directs the Secretary of Defense to transmit to the House of Representatives the FY2010 30-year shipbuilding plan, as required by section 10 USC 231. The text of the resolution states:

RESOLUTION

Directing the Secretary of Defense to transmit to the House of Representatives the fiscal year 2010 30-year shipbuilding plan relating to the long-term shipbuilding strategy of the Department of Defense, as required by section 231 of title 10, United States Code.

Resolved, That the Secretary of Defense is directed to transmit to the House of Representatives, not later than 14 days after the date of the adoption of this resolution, all documents, including telephone and electronic mail records, logs and calendars, and records of internal discussions in the possession of the Secretary and produced by the Secretary of the Navy or the Director of the Office of Management and Budget relating to the following:

(1) The fiscal year 2010 30-year shipbuilding plan relating to the long-term shipbuilding strategy of the Department of Defense, as required by section 231 of title 10, United States Code.

(2) The certification statement of the Secretary required in the plan that both the budget for this fiscal year and the future-years defense program relating to the construction of naval vessels are at a level that is sufficient for the procurement as described in the 30-year shipbuilding plan.

A June 2, 2009, press article on H.Res. 477 stated:

A group of House lawmakers is using a relatively rare legislative technique to compel the Pentagon to submit a 30-year shipbuilding plan after the Navy omitted one from its budget request to Congress earlier this year.

Rep. Randy Forbes, R-Va., and seven other Republicans on the House Armed Services Committee have filed a “resolution of inquiry” directing Defense Secretary Robert Gates to file a shipbuilding plan.

The Navy is required by law to file a plan every year with its budget proposal, but service officials didn’t include one this year, saying they wanted to wait for the results of this year’s Quadrennial Defense Review before committing to a new long-term plan. This also was to be the first year the Navy filed a 30-year aviation plan, but that too was left out of the budget request.

Forbes’ “resolution of inquiry” is unusual because the Armed Services Committee has only 14 legislative days to consider it before it goes to the floor of the full House—as opposed to a standard resolution, which might sit in committee for months. The full House can reject the measure, but its quick timetable is a way to bring the issue to Congress’ immediate attention.

In an announcement Monday, Forbes castigated the Navy for not complying with the laws stipulating that it file a shipbuilding program.

“At a time when China is rapidly closing the 23-ship gap between their navy and ours, and at a time when our Navy is operating with \$4.6 billion in unmet requirements, Americans would be shocked to know that the Department of Defense cannot or will not produce a key plan for the future of our naval fleet,” Forbes said.

“Amidst restructuring at the Department of Defense, it is unacceptable to argue our nation can rely on last year’s shipbuilding plan. This year’s annual report is even more critical in light of last year’s shipbuilding plan, which revealed a shocking 44 percent increase in the Navy’s estimated average annual cost to implement its 30-year plan to achieve a 313-ship Navy.”²⁴

²⁴ Philip Ewing, “House Measure Would Force Shipbuilding Plan,” *NavyTimes.com*, June 1, 2009.

Legislation on Individual Shipbuilding Programs

For legislative activity on individual Navy shipbuilding, conversion, and modernization programs, see:

- CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke;
- CRS Report RL32109, *Navy DDG-1000 and DDG-51 Destroyer Programs: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke;
- CRS Report RL34179, *Navy CG(X) Cruiser Program: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke;
- CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke;
- CRS Report RS22595, *Navy Aegis Cruiser and Destroyer Modernization: Background and Issues for Congress*, by Ronald O'Rourke;
- CRS Report RL34476, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, by Ronald O'Rourke; and
- CRS Report RL32418, *Navy Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

Appendix A. Potential For Changing 313-Ship Proposal

In General

The Navy's 313-ship force structure plan is likely being reviewed as part of the Quadrennial Defense Review (QDR) currently in progress, and could be altered as a result of that review. In addition to the QDR, a September 29, 2008 press report stated:

The Navy is conducting a force structure review that could change the number of ships the service needs in the 2020 time frame to maintain sea control and support the maritime strategy issued last year, the Navy's top programmer told *Inside the Navy* in an exclusive interview last week.

"The 313 plan, as it's known, was based on a force-structure analysis done in 2005 and it has served us very well," Vice Adm. Barry McCullough, deputy chief of naval operations for integration of capabilities and resources, said Sept. 24. "But as we look at the changes in the security environment in the newly published maritime strategy, we felt it was appropriate to work through a similar methodology that we did in 2005 to make sure that we have our force structure correct."

Since Chief of Naval Operations Adm. Gary Roughead took over last fall, he has continually referred to the 313-ship mark as a "floor," meaning the minimal number of ships the Navy needs to conduct its myriad missions.

McCullough would not say if the number of ships the Navy wants in its future fleet will change.

"I'm not going to tell you if it's more or less or anything until we work through the reviews with leadership," he said....

The new force structure review should be complete in conjunction with the release of the 2008 Naval Operations Concept, which will outline how the Navy, Marine Corps and Coast Guard will operate in accordance to the tri-service [Navy-Marine Corps-Coast Guard] maritime strategy published last October.²⁵

An April 2008 press report stated that:

Chief of Naval Operations Adm. Gary Roughead has ordered internal reviews into the Navy's long-term basing requirements and strategies, as well as needs for personnel, ships and aircraft, a Navy spokesman said.

The reviews, which probably will not be made public, will produce an "internal working document" that will help Roughead and other top Navy commanders plan into the coming decades, Navy spokesman Cmdr. Jeff Davis said. The findings probably will be incorporated into future quadrennial defense reviews, shipbuilding plans and budget requests, Davis said.

²⁵ Zachary M. Peterson, "Navy Undergoing A New Force Structure Review Due This Fall," *Inside the Navy*, September 29, 2008.

Roughead mentioned his review of the Navy's basing requirements and strategy—what he called a “force rating” and Davis called a “strategic lay-down”—in response to questions from a House panel in March....

Davis described the four other reviews Roughead requested when he took over:

- * Force structure, including the numbers of aircraft and ships.
- * The life span of those aircraft and ships.
- * The Navy's personnel requirements, including end strength and skill sets.
- * Infrastructure requirements, including details about the physical state of the Navy's bases.²⁶

Amphibious and MPF(F) Ships

The Navy's February 2008 report on the FY2009 30-year shipbuilding plan stated that the Department of the Navy “is reviewing options to increase assault echelon amphibious lift to 33 ships to meet USMC requirements.”²⁷ The report also states:

The Commandant of the Marine Corps has determined that a minimum of 33 amphibious ships is necessary to support their assault echelon lift requirements; specifically, he has requested a force of 11 aviation capable amphibious ships, 11 LPDs and 11 LSDs. The Chief of Naval Operations supports the Commandant's determination.²⁸

The Navy's February 2007 report on the FY2008 30-year shipbuilding plan stated:

Future combat operations may require us to revisit many of the decisions reflected in this report, including those associated with amphibious lift. As the Navy embarks on production of the Maritime Prepositioning Force in this FYDP, the Navy will continue to analyze the utility of these ships in terms of their contribution to, and ability to substitute for, the assault echelon forces in the Navy's future battle-force inventory. The current force represents the best balance between these forces available today. However, changing world events and resulting operational risk associated with the various force structure elements that make up these two components of overall lift will be analyzed to ensure the Navy is not taking excessive risk in lift capability and capacity. While there needs to be a balance between expeditionary and prepositioning ships for meeting the overall lift requirement, future reports may adjust the level of support in one or both of these solutions. Any adjustments made in these capabilities will have to be accommodated in light of the resources available and could require the Navy to commit additional funding to this effort in order to support the overall balance of our shipbuilding program.²⁹

²⁶ Philip Ewing, “CNO Orders Far-Reaching Base, Force Reviews,” *NavyTimes.com*, April 21, 2008.

²⁷ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 5.

²⁸ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. A-3.

²⁹ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2008*, p. 5.

Cruisers and Destroyers

The Navy testified in July 2008 that it no longer wants to procure additional Zumwalt (DDG-1000) class destroyers, and instead now wants to restart procurement of Arleigh Burke (DDG-51) destroyers. The Navy's new plan, if implemented, would change the planned composition of the Navy's destroyer fleet and possibly change the planned total number of cruisers and destroyers.³⁰

SSBNs

The Navy has testified in 2007 and 2008 that its next-generation ballistic missile submarines (SSBNs) are to be fueled with a nuclear fuel core sufficient for the ships' entire expected service lives. Consequently, the Navy has testified, these SSBNs, in contrast to today's SSBNs, would not need a mid-life nuclear refueling. As a result, the Navy testified, the Navy in the future may be able to meet its requirements for SSBN deployments with a force of 12 SSBNs rather than 14.³¹ This testimony suggests that the Navy might at some point change the required number of SSBNs in the 313-ship plan from 14 to 12. The Navy's February 2008 report on the FY2009 shipbuilding plan continues to state that the 313-ship force-structure includes 14 SSBNs, but the FY2009 30-year shipbuilding plan includes 12 SSBNs rather than 14.

³⁰ For further discussion of the Navy's preferred new course for destroyer procurement, see CRS Report RL32109, *Navy DDG-1000 and DDG-51 Destroyer Programs: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke.

³¹ Source: Transcripts of Navy testimony to Senate Armed Services Committee, March 29, 2007, and to Seapower and Expeditionary Forces subcommittee of House Armed Services Committee, March 14, 2008.

Appendix B. Modified Description of Required Number of Aircraft Carriers

In late-March 2007, the Navy modified its description of the number of aircraft carriers in the 313-ship proposal. From February 2006 through early March 2007, the Navy described the 313-ship proposal as one centered on, among other things, 11 aircraft carriers.³² In late March 2007, the Navy modified its description of the 313-ship proposal to one centered on, among other things, 11, and eventually 12, aircraft carriers, the modification being the addition of the phrase “and eventually 12.”³³

The Navy’s modification of its description of the number of aircraft carriers in the 313-ship proposal occurred about a week after the decommissioning of the aircraft carrier John F. Kennedy (CV-67), which occurred on March 23, 2007. The decommissioning of the Kennedy reduced the Navy’s carrier force from 12 ships to 11. The Navy had proposed decommissioning the Kennedy in its FY2006 and FY2007 budgets, and opponents of the Kennedy’s retirement had resisted the proposal. If the Navy, prior to the Kennedy’s decommissioning, had described the 313-ship fleet as one centered on, among other things, 11, and eventually 12, aircraft carriers, opponents of the Kennedy’s decommissioning might have cited the “eventually 12” part as evidence that the Navy really requires 12 carriers, not just 11.³⁴

The Navy’s February 2008 report on the FY2009 30-year shipbuilding plan states that the 313-ship plan includes 11 carriers and does not include a reference to “eventually 12” carriers, but the long-range force projection in the report continues to show a total of 12 carriers in FY2019 and subsequent years.

³² See, for example, Navy testimony before the House Armed Services Committee on March 1, 2007 (transcript of hearing).

³³ See, for example, Navy testimony before the Defense subcommittee of the Senate Appropriations Committee on March 28, 2007, and before the Senate Armed Services Committee on March 29, 2007 (transcripts of hearings).

³⁴ For additional discussion of the debate over the Kennedy’s retirement, see CRS Report RL32731, *Navy Aircraft Carriers: Retirement of USS John F. Kennedy - Issues and Options for Congress*, by Ronald O’Rourke.

Appendix C. Adequacy of Planned 313-Ship Fleet

Specific Ship Categories

Amphibious Ships

Some observers have questioned whether the Navy's proposed total of 31 amphibious ships within the 313-ship fleet will be sufficient. The Marine Corps has stated that a total of 33, including 11 San Antonio (LPD-17) class ships, would be needed to meet the Marine Corps' requirement for having a force capable of lifting the assault echelons of 2.0 Marine Expeditionary Brigades (MEBs). The issue is discussed in more detail in another CRS report.³⁵

Attack Submarines

Some observers have questioned whether the Navy's proposed total of 48 attack submarines within the 313-ship plan will be sufficient, and have suggested that a total of 55 or more would be more appropriate, particularly in light of requests for forward-deployed attack submarines from U.S. regional military commanders, and the modernization of China's naval forces, including its submarine force. The issue is discussed in more detail other CRS reports.³⁶

Aircraft Carriers

Some observers have questioned whether the Navy's proposed total of 11 aircraft carriers through FY2018 will be sufficient, particularly in light of past Navy plans that have called for 12 carriers, the Navy's testimony in 2007 that the 313-ship proposal includes a requirement for an eventual total of 12 carriers, and Navy plans to increase the carrier force back to 12 ships in 2019 and maintain it at that level thereafter. The latter two points, they argue, suggest that the Navy would actually prefer to have 12 carriers between now and FY2019, rather than 11.

Observers have expressed concern that the current carrier force of 11 ships will temporarily decline further, to 10 ships, during the 33-month period between the scheduled retirement of the carrier Enterprise (CVN-65) in November 2012 and scheduled the entry into service of its replacement, the carrier Gerald R. Ford (CVN-78), in September 2015. Even if an 11-carrier force is adequate, these observers argue, a 10-carrier force might not be, even if only for a 33-month period.

10 USC §5062 requires the Navy to maintain an aircraft carrier force of at least 11 operational ships. The Navy for FY2009 is requesting a legislative waiver from Congress that would permit the Navy to reduce the carrier force to 10 operational ships for the 33-month between the retirement of the Enterprise and the entry into service of the Ford. The Navy made the same request as part of its FY2008 budget submission; Congress did not act on the request in FY2008.

³⁵ CRS Report RL32513, *Navy-Marine Corps Amphibious and Maritime Prepositioning Ship Programs: Background and Oversight Issues for Congress*, by Ronald O'Rourke.

³⁶ CRS Report RL32418, *Navy Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke; and CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

Overall Number of Ships

Some observers have questioned whether the overall planned total of 313 ships would be adequate, particularly in light of Navy plans in recent decades for larger total numbers of ships.

One possible method for assessing the appropriateness of the total number of ships being proposed by the Navy is to compare that number to historical figures for total fleet size. Historical figures for total fleet size, however, might not be a reliable yardstick for assessing the appropriateness of the Navy's proposed 313-ship fleet, particularly if the historical figures are more than a few years old, because the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time.

The Navy, for example, reached a late-Cold War peak of 568 battle force ships at the end of FY1987,³⁷ and as of June 5, 2008, had declined to a total of 280 battle force ships. The FY1987 fleet, however, was intended to meet a set of mission requirements that focused on countering Soviet naval forces at sea during a potential multi-theater NATO-Warsaw Pact conflict, while the June 2008 fleet is intended to meet a considerably different set of mission requirements centered on influencing events ashore by countering both land- and sea-based military forces of potential regional threats other than Russia, including non-state terrorist organizations. In addition, the Navy of FY1987 differed substantially from the June 2008 fleet in areas such as profusion of precision-guided air-delivered weapons, numbers of Tomahawk-capable ships, and sophistication of C4ISR systems.³⁸

In coming years, Navy missions may shift again, to include, as a possible example, a greater emphasis on being able to counter improved Chinese maritime military capabilities.³⁹ In addition, the capabilities of Navy ships will likely have changed further by that time due to developments such as more comprehensive implementation of networking technology and increased use of ship-based unmanned vehicles.

The 568-ship fleet of FY1987 may or may not have been capable of performing its stated missions; the 280-ship fleet of June 2008 may or may not have been capable of performing its stated missions; and a fleet years from now with a certain number of ships may or may not be capable of performing its stated missions. Given changes over time in mission requirements, ship mixes, and technologies, however, these three issues are to a substantial degree independent of one another.

³⁷ Some publications, such as those of the American Shipbuilding Association, have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval Historical Center states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apple-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

³⁸ C4ISR stands for command and control, communications, computers, intelligence, surveillance, and reconnaissance.

³⁹ For a discussion, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

Previous Navy force structure plans, such as those shown in **Table 1**, might provide some insight into the potential adequacy of a proposed new force-structure plan, but changes over time in mission requirements, technologies available to ships for performing missions, and other force-planning factors suggest that some caution should be applied in using past force structure plans for this purpose, particularly if those past force structure plans are more than a few years old. The Reagan-era plan for a 600-ship Navy, for example, was designed for a Cold War set of missions focusing on countering Soviet naval forces at sea, which is not an appropriate basis for planning the Navy today.⁴⁰

⁴⁰ Navy force structure plans that predate those shown in **Table 1** include the Reagan-era 600-ship plan of the 1980s, the Base Force fleet of more than 400 ships planned during the final two years of the George H. W. Bush Administration, the 346-ship fleet from the Clinton Administration's 1993 Bottom-Up Review (or BUR, sometimes also called Base Force II), and the 310-ship fleet of the Clinton Administration's 1997 QDR. The table below summarizes some key features of these plans.

Features of Recent Navy Force Structure Plans

Plan	600-ship	Base Force	1993 BUR	1997 QDR
Total ships	~600	~450/416 ^a	346	~305/310 ^b
Attack submarines	100	80/~55 ^c	45-55	50/55 ^d
Aircraft carriers	15 ^e	12	11+1 ^f	11+1 ^f
Surface combatants	242/228 ^g	~150	~124	116
Amphibious ships	~75 ^h	51 ⁱ	36 ⁱ	36 ⁱ

Source: Prepared by CRS based on DOD and U.S. Navy data.

a. Commonly referred to as 450-ship plan, but called for decreasing to 416 ships by end of FY1999.

b. Original total of about 305 ships was increased to about 310 due to increase in number of attack submarines to 55 from 50.

c. Plan originally included 80 attack submarines, but this was later reduced to about 55.

d. Plan originally included 50 attack submarines but this was later increased to 55.

e. Plus one additional aircraft carrier in the service life extension program (SLEP).

f. Eleven active carriers plus one operational reserve carrier.

g. Plan originally included 242 surface combatants but this was later reduced to 228.

h. Number needed to lift assault echelons of one Marine Expeditionary Force (MEF) plus one Marine Expeditionary Brigade (MEB).

i. Number needed to lift assault echelons of 2.5 MEBs. Note how number needed to meet this goal changed from Base Force plan to the BUR plan—a result of new, larger amphibious ship designs.

Appendix D. Affordability of Navy 30-Year Plan in 2006-2007

In 2006 and 2007, the Navy's position was that for its shipbuilding plan to be affordable and executable, five things needed to happen:

- The Navy's overall budget needed to remain more or less flat (not decline) in real (inflation-adjusted) terms.
- Navy Operation and Maintenance (O&M) spending needed to remain flat (not grow) in real terms.
- Navy Military Personnel (MilPer) spending needed to remain flat (not grow) in real terms.
- Navy research and development (R&D) spending needed to decrease from recent levels and remain at the decreased level over the long run.
- Navy ships needed to be built at the Navy's currently estimated prices.

The Navy said that the first four things were needed for the Navy to be able to increase the shipbuilding budget from an average in FY2002-FY2007 of about \$9.6 billion per year in FY2008 dollars to a long-term average of about \$15.4 billion per year in FY2008 dollars—an increase of about 60% in real terms.⁴¹ The fifth thing on the list, the Navy said, was needed if all the ships in the shipbuilding plan were to be affordable within an average annual shipbuilding budget of \$15.4 billion in FY2008 dollars.

Some observers in 2006 and 2007 questioned whether all five of the above things would happen, arguing the following:

- The need in coming years to fund an increase in Army and Marine end strength could, within an overall DOD budget that remains more or less flat in real terms, require funding to be transferred from the Air Force and Navy budgets to the Army and Marine Corps budgets, which could, for a time at least, lead to a real decline in the Air Force and Navy budgets.
- DOD in the past has not been fully successful in meeting its goals for controlling O&M costs.
- The Navy does not have full control over its MilPer costs—they can be affected, for example, by decisions that Congress makes on pay and benefits.
- While the Navy may be able to decrease R&D spending in coming years as a number of new systems shift from development to procurement, it may be difficult for the Navy to keep R&D spending at that reduced level over the long run, because the Navy at some point will likely want to start development of other new systems.

⁴¹ Source: CBO telephone conversation with CRS, May 31, 2006. See also Statement of J. Michael Gilmore, Assistant Director, and Eric J. Labs, Principal Analyst, [On] Potential Costs of the Navy's 2006 Shipbuilding Plan, [Testimony] before the Subcommittee on Projection Forces Committee on Armed Services U.S. House of Representatives, March 30, 2006.

- Several Navy shipbuilding programs have experienced significant cost growth in recent years, and CBO estimates that Navy ships will cost substantially more to build than the Navy estimates.

If one or more of the five required things listed above did not happen, it was argued in 2006 and 2007, it might become difficult or impossible to execute the Navy's shipbuilding plans. The risk of the plan becoming unexecutable, it was argued, might become particularly acute starting in FY2011-FY2013, when the Navy planned to increase procurement rates for cruisers and destroyers and for submarines.

Appendix E. Size of the Navy and Navy Shipbuilding Rate

Size of the Navy

Table E-1 shows the size of the Navy in terms of total number of ships since FY1948; the numbers shown in the table reflect changes over time in the rules specifying which ships count toward the total. Differing counting rules result in differing totals, and for certain years, figures reflecting more than one set of counting rules are available. Figures in the table for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

As shown in the table, the total number of battle force ships in the Navy reached a late-Cold War peak of 568 at the end of FY1987 and began declining thereafter.⁴² The Navy fell below 300 battle force ships in August 2003 and included 280 battle force ships as of June 5, 2008.

As discussed in **Appendix C**, historical figures for total fleet size might not be a reliable yardstick for assessing the appropriateness of the Navy's proposed 313-ship fleet, particularly if the historical figures are more than a few years old, because the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time. For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

⁴² Some publications have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval Historical Center states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apple-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

Table E-1. Total Number of Ships in the Navy Since FY1948

FY^a	Number	FY^a	Number	FY^a	Number
1948	737	1969	926	1990	547
1949	690	1970	769	1991	526
1950	634	1971	702	1992	466
1951	980	1972	654	1993	435
1952	1,097	1973	584	1994	391
1953	1,122	1974	512	1995	373
1954	1,113	1975	496	1996	356
1955	1,030	1976	476	1997	354
1956	973	1977	464	1998	333
1957	967	1978	468	1999	317
1958	890	1979	471	2000	318
1959	860	1980	477	2001	316
1960	812	1981	490	2002	313
1961	897	1982	513	2003	297
1962	959	1983	514	2004	291
1963	916	1984	524	2005	282
1964	917	1985	541	2006	281
1965	936	1986	556	2007	279
1966	947	1987	568	2008	282
1967	973	1988	565	2009	
1968	976	1989	566	2010	

Source: Compiled by CRS using U.S. Navy data. Numbers shown reflect changes over time in the rules specifying which ships count toward the total. Figures for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

- a. Data for earlier years may be for the end of the calendar year (or for some other point during the year), rather than for the end of the fiscal year.

Shipbuilding Rate

Table E-2 shows past (FY1982-FY2009) and requested (FY2010) rates of Navy ship procurement.

Table E-2. Battle Force Ships Procured or Requested, FY1982-FY2010

(Procured FY1982-FY2009; requested FY2010)

82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
17	14	16	19	20	17	15	19	15	11	11	7	4	4	5	4	5
99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
5	6	6	6	5	7	8	4 ^a	5 ^a	3 ^a	8	8	n/a	n/a	n/a	n/a	n/a

Source: CRS compilation based on examination of defense authorization and appropriation committee and conference reports for each fiscal year. The table excludes non-battle force ships that do not count toward the 313-ship goal, such as certain sealift and prepositioning ships operated by the Military Sealift Command and oceanographic ships operated by agencies such as the National Oceanic and Atmospheric Administration (NOAA).

- a. The totals shown for FY2006, FY2007, and FY2008, have been adjusted downward to reflect the cancellation two LCSs funded in FY2006, another two LCSs funded in FY2007, and an LCS funded in FY2008.

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